

Original Article

Effect of Leech therapy in the management of Psoriasis

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Abstract

Background: Psoriasis is a disorder of skin which affects nearly 1-2% of people worldwide and approximately about 1% in India. The exact cause of the disease is still unclear however strong genetic predisposition of the disease is seen. Leech Therapy (*Irsal-e-Alaq*) has been fruitfully practiced by Greco-Arab physicians in management of Psoriasis since centuries.


Aim: To evaluate the efficacy of alternative non pharmacological treatment (Leech therapy) in psoriasis patients.

Materials & Methods: The present study was single group open clinical study. 40 patients were selected from the general OPD of research centre and screened before undergoing the scientific study. Leech therapy was administered once in a week with 10 leeches on the affected part. After the gap of seven days the procedure was repeated for total five sittings and was the patients were followed up for a period of one year to watch for any recurrence or relapse of the disease or related symptoms.

Results: Hirudotherapy showed excellent results in symptomatic relief in 31 % of patients and complete cure in 9% without recurrence of the disease. 60% of the patients shows mixed response of transient relief in symptoms. There was relapse of the condition due to environmental changes and different food related habits. There was marked influence of different humours predominance in acute exacerbation in *Damavi* (Sanguine temperament) cases. The increased exacerbations were respectively more in *Damavi*, *Safriavi* (Bilious temperament), *Balghami* (Phelgmatic temperament).

Conclusion: The severity of psoriasis and efficacy of the leeching therapy was assessed by the Psoriasis Area and Severity Index (PASI) Scale. The study showed significant reduction in the PASI score ($P < 0.01$). No obnoxious side effects were observed. It was therefore concluded that Leech therapy was safe and effective in the management of psoriasis.

Keywords: Hirudotherapy, *Irsal-e-Alaq*, Psoriasis, Unani System of Medicine

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Introduction

India has an estimated 0.8% of population suffering from Psoriasis.^[1] It is a papulo-squamous disorder of the skin which is chronic and inflammatory in nature; clinically identified by the presence of sharply demarcated papules and plaques, covered by silvery micaceous scale.^[2] The exact cause of the condition is still unclear, however the chances of the disease running in families is more. The disease gets aggravated by the changes in the climatic conditions, super added infections, stress, etc. The current treatment modalities includes usage of corticosteroids, anti-mitotic drugs, TNF-alpha-blocking antibody, TNF-alpha blocker, etc albeit with various limitation.

Taqashshure jild is the condition described in Unani system of medicine which has a similar clinical presentation as that of Psoriasis. The disease is characterised by scaling of the skin is similar to the scales of fish which is due to loss of water contents present in the skin.^[3] *Hiddat* (hotness) and *Taufun Dam* (turbid) as well as *Safa* (impairment of blood and bile) are the aggravated humors of body which are responsible for causing the condition.^[4,5]

Leech application (*Irsal-e-Alaq*) is an essential part of Unani therapy *Ilaj-Bil-Tadbeer* (regimen therapy) in Unani System of Medicine has been used in the management of psoriasis since centuries. However, there only few research works which has exploited the usage of leech in the management of psoriasis. Hence the objective of the present study was to assess the safety and efficacy of of leech therapy in the management of psoriasis using modern scientific parameters.

Materials & Methods

The present study was single group, open clinical study encompassing 40 patients who fulfilled the inclusion criteria. The source of the patients was the general OPD of the research centre. The necessary ethical clearance was received from the place of the study. All the enrolled patients were fully investigated with the necessary biochemical & pathological tests before and after completing the study. Patient were administered with 10 leeches on the the effected side in one sitting, next sitting was conducted after a gap of 7 days. A total of five sittings of leech therapies was administered. All the patients were followed up for a period of one year to observe for any recurrence or relapse of the disease or related symptoms.

Inclusion Criteria

- Patients aged 20 to 60 years of either sex.
- Not under any other medication for Eczema, Dermatophytes, or any other skin disorder.
- Classical symptoms of Psoriasis according to PASI score.
- Not effected with any other systemic disorders

Exclusion criteria

- Pregnant women and lactating mother.
- Any of them not covered under inclusive criteria.

Investigation done

CBC, ESR, Rheumatoid Factor, ASO, Serum Uric Acid, LFT, KFT, TFT, Lipid Profile, Urine Routine & Microscopic.

Criteria for assessment

Subjective criteria-It was assessed mainly on the basis of improvement in sign and symptoms of Psoriasis like – Scaling (Plaques) & Itching as given in PASI table.

Objective criteria- Erythema (Redness), True Area Present, Scaling and number of patches.

Psoriasis Area Severity Index (PASI) is the furthermost extensively used tool for the measurement of severity & rigorousness of psoriasis.^[6]

The Grading of PASI score are as follows which was calculated from the base line of treatment to completion the study (Table no.1).

Table no. 1: Grading of PASI

Grade	Category
0	None
1	Mild
2	Moderate
3	Severe
4	Very severe

Area of skin involved: was assessed in all the areas of involvement, the percent of area/zone/range of skin involved was calculated and then transformed into a grade as follows in table no. 2,

Table no. 2: Grading of Area of Skin involved

Grade	Range
0	0-6%
1	<10%
2	10-29%
3	30-49%
4	50-69%
5	70-89%
6	90-100%

Intervention: Ten leeches were applied on affected part once in a week. Leeches were allowed to suck the blood till they fall themselves. The wounds caused by leeches were washed and dressing was done with antiseptic lotion.

Procedure:- Primarily a leech was placed on the involved site of the affected part and observed for 2 minutes (to allow the leech to suck the blood from the site), if the leech was unable to suck the blood, a small incision or a needle prick was given and a leech was placed over the site. Similar procedure was followed to place all leeches on the affected part. A wet Gauze was placed over the body of the leech to provide moisture to the leech. After 10-15 minutes the leech itself was detached from the site after sucking the blood. If it did not detach, a small amount of *Haridra* (turmeric) or a drop of betadine was placed at the site of the bite and leech was taken out. A piece of Gauze was placed over the site of the bite to avoid further bleeding from the site of the affected part. This procedure was performed for 5 sittings without any complications.

Duration of treatment: Five Weeks.

Follow-up: Once in a week for 5 weeks during treatment and 1 year after the completion of trial.

Observations

40 patient underwent the leech therapy for all the 5 sittings, among which patients aged 31-40 years of age had maximum prevalence of 37.5% (table no.3). Male patient were more effected (75%) (table no.4); patient who consumed vegetarian diet (62.5%) were seen to be more effected (table no.5); majority (55%) of patients belonged to middle socio-economic class (table no.6).

Table no.3: Distribution of patients on the basis of age

Age group (in years)	No. of patients
20-30	3
31-40	15
41-50	10
51-60	12
Total	40

Table no.4: Distribution of participant on the basis of sex

Sex	No. of patients
Male	30
Female	10
Total	40

Table no.5: Distribution of participant on the basis of Dietary habit

Dietary habit	No. of patients
Vegetarian	25
Non-vegetarian	14
Total	40

Table no.6: Distribution of participants according to SES

SES	No. of patients
Lower Class	8
Middle Class	22
Higher Class	10
Total	40

Table no.7: Distribution of patients according to their Mizaj (Temperament)

Mizaj	No. of patients
<i>Damavi</i> (Sanguine)	22
<i>Balghami</i> (Phelgmatic)	8
<i>Safravi</i> (Billous)	10
<i>Saudavi</i> (Melancholic)	0
Total	40

According to the *Mizaj* out of 40 patients 22 patients (62.5%) were of *Damvi*, 8 patients were of *Balgami*, 10 patients were of *Safavi* and 0 patients were of *Saudavi Mizaj* (Melancholic Temperament). It means psoriasis was more common in the patients with *Damvi Mizaj* and least in *Saudavi Mizaj* (table no.7).

Results

Changes in PASI score which is give in Table no.8 & 9 is evident that there was significant improvement in erythema, thickening, scaling and area involvement in patients of psoriasis who underwent leech therapy which was statistically significant ($p < 0.01$).

During the follow up period post treatment sittings, there was significant reduction in crust formation and itching.

Discussion

Psoriasis being the chronic disease it disturbs the day to day activity of the patient & is also having a cosmetic stigma. The disease needs intense attention by managing the lesion with respect to its hygiene & complications. According Unani system of medicine almost all the ailments are treated on temperament basis [7] and eliminating the morbidity of the humor and addressed by giving *Munzj* or *Mushil* (Concoction

Table no. 8: Effect of Leech therapy in Patients of Psoriasis (PASI)

PASI	Baseline	1 st Follow-up	2 nd Follow up	3 rd Follow up	4 th Follow up
Erythema	4	4	2	1	0
Thickening	4	4	2	2	1
Scaling	4	3	2	2	1
True Area Present	2.5 Palms	2.5 Palms	2.5 Palms	2.5 Palms	2.0 Palms
PASI Score	2.4	2	1.85	1	0.4

Table no.9: Statistical analysis using paired t-test to determine the significance of Leech therapy treatment

	Base line Vs 1 st Follow up (p-value)	Base line Vs 2 nd Follow up (p-value)	Base line Vs 3 rd Follow up (p-value)	Base line Vs 4 th Follow up (p-value)
Erythema	0.5	0.1	0.04	<0.001
Thickening	0.5	0.1	0.07	<0.001
Scaling	0.5	0.06	0.04	<0.001
True Area Present	0.2	0.2	0.2	<0.001

In this study, leech therapy showed excellent results in way of producing symptomatic relief in 31 % of patients and complete cure in 9% without recurrence of the disease. 60% of the patients shows mixed response of transient relief in symptoms and relapse with environmental changes and different food related habits along with the marked influence of different humors predominance in acute exacerbation in *Damavi* temperament cases.

During the study no statistical changes in the blood and urine investigation was found during before and after treatment. The study showed no obnoxious side effects through out course.

or Purgation) or by doing *Tankiya*. In the present study it has been observed that out of different humors the *Damvi Khilt* was prominent. *Saudavi Khilt* (Melancholic) patients have observed to be least affected.

Leech therapy works vowing to the presence of various bioactive substances like Hirudin, Calin, Inhibitors of Kallikrein, Histamin like substances, Hyaluronidase, Collagenase, Pseudohirudin, Destabilase, Lipase, etc. It causes vasodilatory effect due to the components found in leech saliva. Histamine like substance acetylcholine corrects the microangiopathy. Leech therapy has anesthetizing effect thus it helps in relieving itching.

The presence of substances like Bdelles & Egglins in the leech saliva has an anti-inflammatory effect and thus relieves the local erythema & inflammation.^[8]

Conclusion

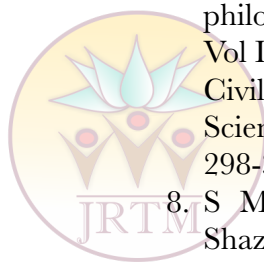
On the basis of observed results it can be concluded that leech therapy provided significant improvement in the sign and symptom of the patient of Psoriasis and significant improvement on the PASI score. Leech therapy is less time consuming, economical, acceptable treatment without any noncompliance, it also showed very little relapse in the psoriatic lesions, specially crust formation & itching.

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